



KHX2133C9AD3W1K2/4GX

4GB (2GB 256M x 64-Bit x 2 pcs.) DDR3-2133MHz

CL9 240-Pin DIMM Kit

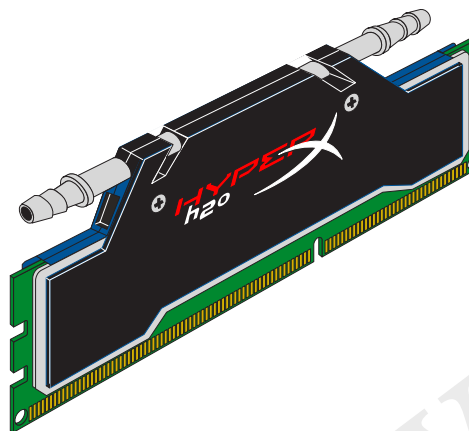
DESCRIPTION:

Kingston's KHX2133C9AD3W1K2/4GX is a kit of two 256M x 64-bit 2GB (2048MB) DDR3-2133MHz CL9 SDRAM (Synchronous DRAM), water cooled, memory modules, based on sixteen 128M x 8-bit DDR3 FBGA components per module. Each module kit supports **Intel® XMP** (Extreme Memory Profiles). Total kit capacity is 4GB. Each module kit has been tested to run at DDR3-2133MHz at a low latency timing of 9-11-9 at 1.65V. The SPDs are programmed to JEDEC standard latency DDR3-1333MHz timing of 9-9-9 at 1.5V. Each 240-pin DIMM uses gold contact fingers and requires +1.5V. The JEDEC standard electrical and mechanical specifications are as follows:

FEATURES:

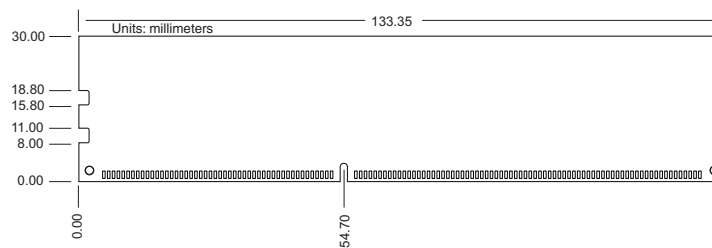
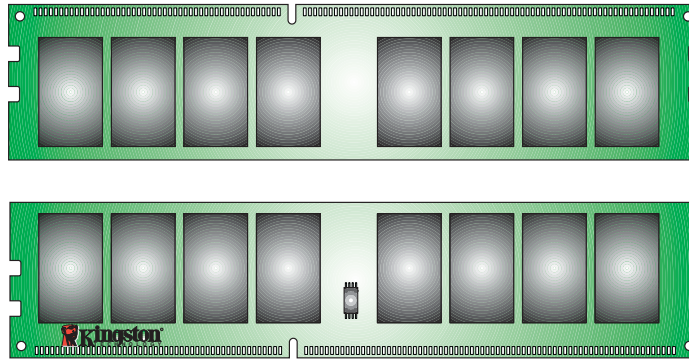
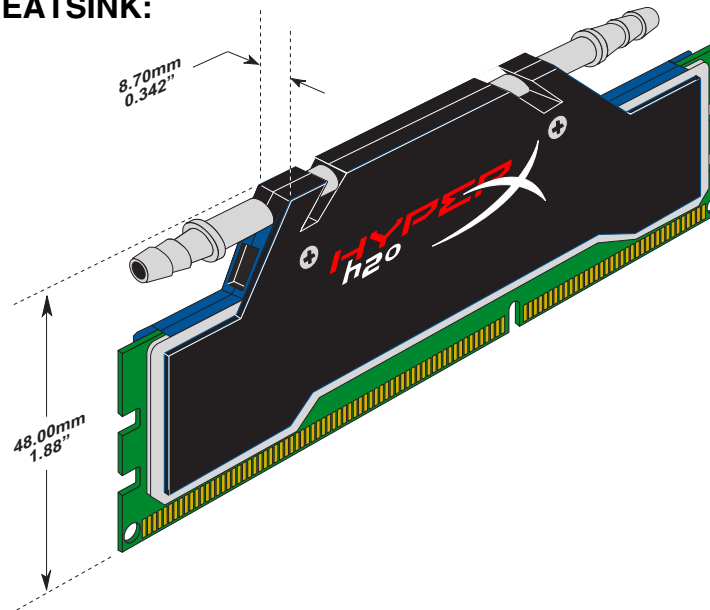
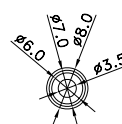
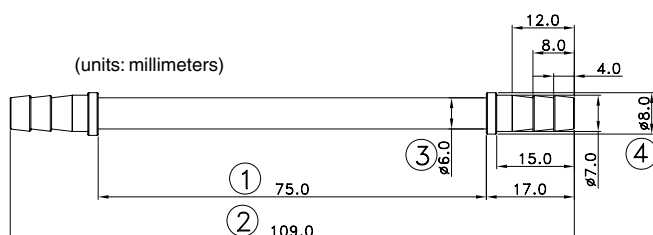
FEATURES:

- ✓ JEDEC standard 1.5V $\pm$ 0.075V Power Supply
- ✓ VDDQ = 1.5V $\pm$ 0.075V
- ✓ 667MHz fCK for 1333Mb/sec/pin
- ✓ 8 independent internal bank
- ✓ Programmable CAS Latency: 5,6,7,8,9,10
- ✓ Posted CAS
- ✓ Programmable Additive Latency: 0, CL - 2, or CL - 1 clock
- ✓ Programmable CAS Write Latency(CWL) = 7(DDR3-1333)
- ✓ 8-bit pre-fetch
- ✓ Burst Length: 8 (Interleave without any limit, sequential with starting address "000" only), 4 with tCCD = 4 which does not allow seamless read or write [either on the fly using A12 or MRS]
- ✓ Bi-directional Differential Data Strobe
- ✓ Internal(self) calibration : Internal self calibration through ZQ pin (RZQ : 240 ohm $\pm$ 1%)
- ✓ On Die Termination using ODT pin
- ✓ Average Refresh Period 7.8us at lower then TCASE 85°C, 3.9us at 85°C < TCASE . 95°C
- ✓ Asynchronous Reset
- ✓ PCB : Height 1.88" (48.00mm) w/ heatsink, double sided component



PERFORMANCE:

- | | |
|--|--------------------------------|
| ✓ CL(IDD) | 9 cycles |
| ✓ Row Cycle Time (tRCmin) | 49.5ns (min.) |
| ✓ Refresh to Active/Refresh Command Time (tRFCmin) | 110ns |
| ✓ Row Active Time (tRASmin) | 36ns (min.) |
| ✓ Power | 1.800 W (operating per module) |
| ✓ UL Rating | 94 V - 0 |
| ✓ Operating Temperature | 0° C to 85° C |
| ✓ Storage Temperature | -55° C to +100° C |

MODULE DIMENSIONS:**MODULE WITH HEATSINK:****COOLING TUBE DIMENSIONS:**

1/4" (6.35mm) I.D. fluid hose recommended